

ATTACHMENT 3

DESCRIPTION OF THE PROJECT

PROJECT LOCATION

The project site, shown in Figure 1-1, Site Vicinity, is at 12952 Lampson Avenue at the southwest corner of Lampson Avenue and Haster Street, which is in the City of Garden Grove, County of Orange, California. The closest major highway to the project site is the Garden Grove Freeway (SR-22), located approximately 0.5 miles to the south.

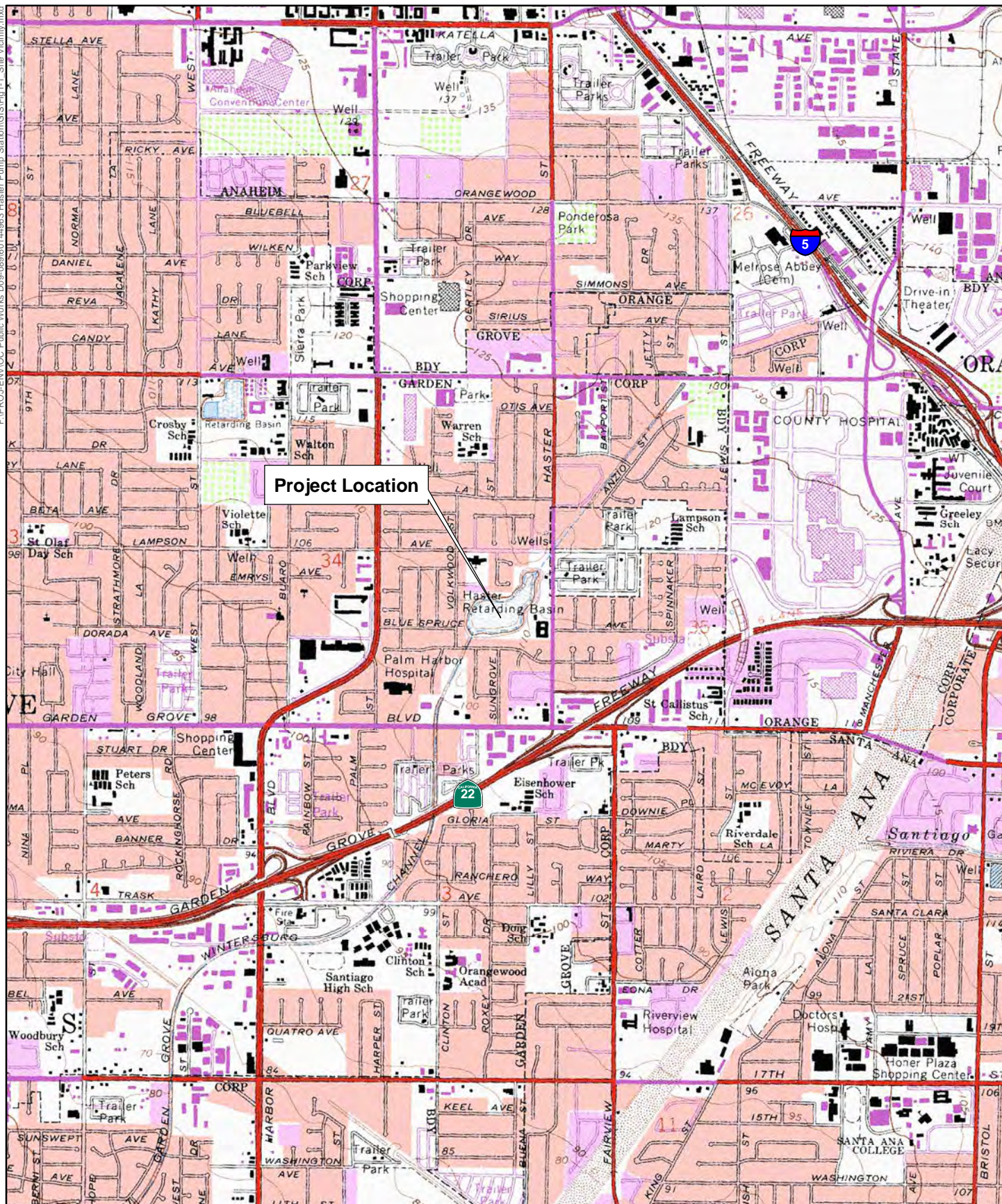
PROJECT BACKGROUND

Haster Basin (Basin) is located within a 21.2-acre flood control facility owned and operated by the Orange County Flood Control District (OCFCD). In the 1960s the Basin was constructed for the purpose of flood control. In 1976, Twin Lakes Freedom Park (Park) was established around the Basin to provide recreation for the City of Garden Grove (City). The Park currently includes benches, picnic tables, barbecue stands, exercise stations, and a 3,900-foot-long asphalt-paved maintenance road that serves as a pedestrian perimeter path for walking and jogging. The perimeter walking path was initially constructed as a maintenance road but is used frequently by park visitors as a walking/jogging trail and was repaved in 1982. The City owns 1.21 acres adjacent to Haster Street that contains a playground and domestic water well. The City operates the entire Park.

The Basin and Park are located in the Westminster Watershed. Although the Basin is not located in the Santa Ana River Watershed, it is within the Santa Ana River floodplain and the boundaries of the Federal Emergency Management Agency's (FEMA) historical 100-Year Floodplain for the Santa Ana River (FEMA 2005). Based on interpretation of historic aerial photographs from circa 1955, the site of the Basin and surrounding areas were once dominated by active agriculture and farming-related activities, associated out-buildings, roadways, a quarry, and other public/private infrastructure that were all located within a FEMA 100-Year Floodplain.

Due to occurrences of localized flooding in the surrounding neighborhoods in 1974, 1983, 1992, 1995, 1997, and 1998 (U.S. Army Corps of Engineers, Westminster Reconnaissance Study, 2001), improvements to the Basin have been determined necessary in order to expand flood control capabilities and to provide enhanced protection from flooding. The flood control standard, when the Basin was constructed, was to convey 65 percent of a 25-year storm. Since that time, the watershed has become highly urbanized resulting in increased flows into the Basin. The watershed tributary to the Basin is approximately 1,845 acres and includes portions of the cities of Anaheim, Garden Grove, and Orange. In addition, two regional storm drains discharge directly into the Basin:

- East Garden Grove Wintersburg Channel, a 9-foot by 6-foot reinforced concrete box (RCB) with a design capacity of 650 cubic feet per second, enters the Basin at its northeast corner.
 - Oertley Storm Drain, a 96-inch reinforced concrete pipe (RCP) with a design capacity of 400 cubic feet per second, enters the Basin from the north.
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Source: Anaheim, CA USGS 7.5' Topographic Quadrangle (1977) and AECOM (2010).

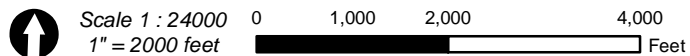


Figure 1-1
Site Vicinity

The Basin outlets toward the southwest, through the East Garden Grove Wintersburg Channel, which at this point is a 10-foot by 5.5-foot vertical walled concrete-lined channel located near Aspenwood Lane, as shown on Figure 1-2, Aerial Photograph. Analysis provided in the Preliminary Design Report for Haster Basin prepared by CH2MHILL, dated 2001, determined that the Basin does not have adequate capacity for the fully developed condition of the area. Thus, the facility must be upgraded to reduce the likelihood of overtopping of the Basin during storm events. Overtopping means that water would flow over the banks of the Basin and onto the surrounding area resulting in potential flooding. A project report for the East Garden Grove Wintersburg Channel, dated 1994, recommended improvements at the Basin consisting of a new pump station.

There is insufficient area in the community surrounding the Basin to engage in sports such as frisbee, field hockey, and soccer that require substantial amounts of space. The First Supervisorial District has requested additional areas for active sports recreational use for youth in the City and surrounding area to meet the demand. This facility has been deemed ideal for providing additional recreational opportunities for the community.

ENVIRONMENTAL SETTING AND EXISTING CONDITIONS

Single-family detached homes constructed in the 1950s are located adjacent to the project site on the west, north, and south sides, as shown on Figure 1-2. There are also multi-family residential homes and a mobile home park located across Haster Street to the east. Existing facilities surrounding the project site include: a City-owned and operated water-well pump located on the northeast side of the Basin; a church located adjacent to the site to the north; a service/gas station located across Lampson Avenue to the north; a convalescent facility located on the east side of the Basin; and a paved parking lot with forty four (44) spaces located at the corner of Haster Street and Lampson Avenue. Access to the parking lot is provided from Lampson Avenue only.

Existing flood control facilities within the project site include the following elements:

- Basin fill water well with pump located at the southwest corner (non-functioning).
- Pump station with a 5.6-cubic-feet-per-second submersible pump located at the southwest corner of the Basin to control lake levels during storm events.
- Earthen berms located along the north, south, and east Basin perimeters to provide additional flood protection to the local residents.

The Basin has historically been operated to maintain a water surface elevation between 94.5 and 95 feet with approximately 7 to 8 feet of standing water, using a submersible pump station. Currently, the Basin's ordinary high water mark is at a surface elevation of roughly 94 to 99 feet.

In 1972 OCFCD entered into a 25-year agreement with the City, allowing the City to use the Basin and adjacent OCFCD-owned land as a park. In 1976, the Park was constructed around the Basin as a recreation resource. In 1997 the agreement expired and no new agreement has been negotiated between OCFCD and the City. Currently, OCFCD is responsible for the operation of the Basin, and currently the City maintains the park facilities, landscaping, and irrigation systems.

Recreational amenities within the Park currently include the following:

- Twenty three (23) picnic tables and benches, some of which are periodically submerged in the Basin.
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Source: Digital Globe, Inc. (March 2008), and AECOM (2010).

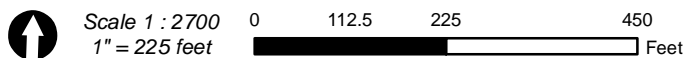


Figure 1-2
Aerial Photograph

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- An 8-foot wide asphalt walking/jogging and amenity trail around the Basin perimeter for exercise and educational opportunities such as bird watching and nature viewing.
 - Exercise stations at various locations along the Basin perimeter.
 - Children's play area with play sets, covered picnic facility, sand box, and turf grass.
 - Park restroom facilities.

Basin landscaping consists of non-native grasses, shrubs, and native and non-native mature trees of various species.

PROJECT OBJECTIVES

Project objectives include the following:

- Increase the storage capacity of Haster Basin to accommodate large storm events. This will be accomplished by pumping out water from the Basin during the early portion of storm events to ensure there is sufficient capacity during the peak of the storm.
 - Provide increased regional flood protection to surrounding neighborhoods and downstream areas by reducing the likelihood of overtopping of the Basin during storm events. The 100-year flow rate expected into Haster Basin is 2,200 cubic feet per second and the downstream channel capacity is 460 cubic feet per second; without the proposed pump station overbank flow would flood the homes surrounding the Basin.
 - Increase the capacity of the downstream reach of the East Garden Grove Wintersburg Channel from Haster Basin to Aspenwood, to a maximum of 460 cubic feet per second as compared to the current capacity of 400 cubic feet per second. This will be accomplished by reconstructing the outlet channel within the specified reach.
 - Allow for improvement of deficient upstream flood facilities that at this time cannot be improved to full 100-year conveyance due to the possibility of overwhelming deficient downstream flood facilities (i.e., Haster Basin).
 - Maintain the ability of the existing Basin to recharge groundwater and evaporate all summer urban runoff into the Basin so there is no discharge from the Basin during the summer.
 - Provide water quality treatment.
 - Supplement local organized and passive recreational opportunities by installing a grass field area that can be used for active sports such as frisbee, field hockey, soccer, or open free play, and for picnicking. This use would be provided by filling in a portion of the existing Basin;
 - Enhance local Park appearance and function by providing recreational improvements noted above, as well as updated exercise stations and park amenities.
 - Increase sustainability and decrease maintenance/operating costs by using low impact development ("green" technology) where feasible within the Park boundary. Low impact development could include drought tolerant plantings, bio-swales, permeable paving, water-efficient irrigation, and use of recycled materials.
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DESCRIPTION OF THE PROJECT

The project includes the following elements:

- Enhanced flood water storage.
- A new pump station at the southwest corner of the Basin.
- Downstream improvements to the East Garden Grove Wintersburg Channel to increase capacity between the new pump station and Aspenwood Lane.
- Filling a portion of the Basin for a recreation area.
- Construction of a triple-barrel concrete flood control box under the existing parking lot and fill area.
- The existing 44 car parking lot will be reconfigured and expanded. The expanded parking lot will have approximately 80 parking spaces.
- Construction of a driveway/construction access road off Haster Street, which will be converted to a permanent entrance/exit to the new parking lot at the end of construction.
- Landscaping and irrigation system.

The proposed site plan is shown on Figure 1-3, Site Plan.

Basin Storage Enhancement

The Basin storage capacity will be enhanced and will provide increased flood protection to surrounding neighborhoods and downstream areas by reducing the likelihood of the overtopping of the Basin during storm events. Enhanced flood water storage will be accomplished by steepening the slopes to the Basin floor, removing the existing island, and constructing a pump station. The proposed pump station will improve flood protection to the surrounding area because base stormwater flows will be pumped out as they enter the Basin during a storm event, which will then allow for enhanced Basin storage of the peak stormwater flows. It should be noted that in March of 1998, a Final Environmental Impact Report (EIR) (State Clearinghouse No. 96061059) was certified by the County of Orange for the East Garden Grove Wintersburg Channel/Oceanview Channel System (C05/C06). The Final EIR proposed upstream and downstream flood channel improvements to the East Garden Grove Wintersburg Channel. Some of these improvements have been or are in the process of being constructed, while other improvements will be considered in future phasing of the channel system, depending upon priority and funding availability. The proposed pump station in conjunction with these improvements to the flood channels upstream and downstream of the Basin will provide 100-year-level flood protection once all improvements are complete.

The Basin will be deepened from the current Basin invert of 87 feet to elevation 83 feet, a depth of 4 feet. The Basin slopes will be graded to a slope of 2 feet horizontal to 1 foot vertical from elevation 83 feet to elevation 110 feet. Dry weather flows, generally comprised of water from over-irrigation, car washing, and pool or spa backwash, will be held in the Basin during the summer months and allowed to evaporate and recharge the groundwater aquifer. The normal water surface elevation during the summer operation is 94 to 99 feet. The normal water surface elevation during the winter operation is approximately 99 feet, which would be pumped down to elevation 94 feet with the project. The Basin's slope stabilization will be accomplished by landscaping with native grasses, shrubs, and trees.



Source: OCFCD (2010), and AECOM (2010).



Not to Scale

**Figure 1-3
Site Plan**

Grading of the Basin slopes will increase the total storage volume to approximately 146.05 acre feet at elevation 100 feet. The Basin volume between elevation 92.0 feet, the estimated groundwater level, and elevation 83.0 feet, the Basin bottom, will be dead storage (e.g. wet detention basin) to be used for water quality management purposes. The volume of the dead storage will be 69 acre feet. Earthwork quantities for the grading plan are estimated at 183,778 cubic yards of excavation. Approximately 72,167 cubic yards of this excavated material will be used for fill: 23,807 cubic yards will be used as unclassified fill for the pump station and 48,360 cubic yards will be used to fill the northeast portion of the Basin to provide an approximately 2.5-acre recreation area. An additional 9,680 cubic yards of clean fill/top soil will be imported and used as cover over the excavated fill for the recreation area. The remaining 111,611 cubic yards of excavated material will be exported from the site and disposed of at an approved location. It is anticipated that this excess material will be disposed of at the Olinda Alpha Landfill in Brea.

Pump Station Location and Design

The pump station will be located adjacent to the southwest corner of the Basin as shown on Figure 1-4, Pump Station. The pump station is located approximately 173 feet north of Aspenwood Lane. The proposed pump station building would be located approximately 50 feet, 50 feet, and 80 feet away from the existing property lines of the three nearest residences. The distance from the pump station building to the houses on the three nearest residential properties is 80 feet, 100 feet, and 110 feet respectively.

The proposed 460-cubic-feet-per-second pump station would include three natural gas engines, discharge lines, a wet well, a trash rack, auxiliary propane tanks, generator, and electrically operated sump pumps. The pump station would be equipped with a control room and bathroom, and will be housed within a two-story-high reinforced concrete building finished with stucco, Spanish-style tile roof, and other architectural features. Figure 1-5, Rendering of Pump Station, shows an architectural rendering of the pump station. The flat roof of the building, which is not visible in Figure 1-5, will be white to reduce absorbed heat energy. The pump station building would be approximately 90 feet long, 70 feet wide, and 32 feet, 10 inches high from the existing ground elevation.

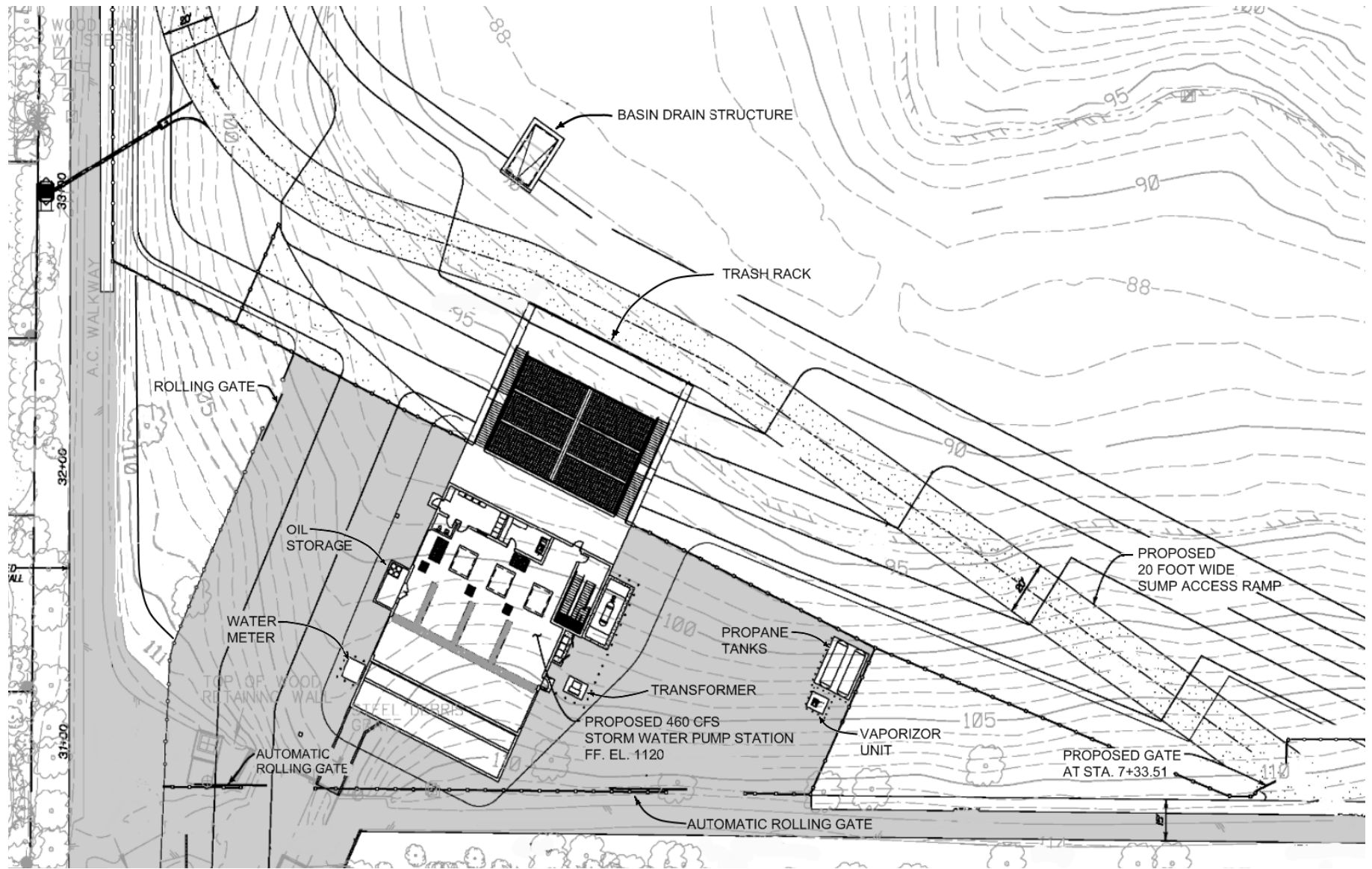
There will be low wattage security lighting located just above each exterior door. A small parking lot for maintenance vehicles and a material storage unit to be used for storing engine oil, gear oil, degreasers, and an additional air compressor will be situated adjacent to the pump station.

The Basin outlets toward the southwest, through the East Garden Grove Wintersburg Channel, which at this point is a 10-foot by 5.5-foot vertical walled concrete-lined channel with a design capacity of 400 cubic feet per second. Due to the 460-cubic-feet-per-second capacity of the proposed pump station to be constructed at this outlet point, a section of the East Garden Grove Wintersburg Channel between the proposed pump station and Aspenwood Lane will need to be modified. This section of the East Garden Grove Wintersburg Channel will be increased in capacity from 400 to 460 cubic feet per second to improve conveyance efficiency. In order to achieve this required capacity, the channel bottom will be steepened.

Operational Water Quality Best Management Practices

Operational Best Management Practices (BMPs) will be installed for water quality treatment prior to discharge of water from the Basin. These will include, but not be limited to, the following:

- A trash rack, to capture trash and debris, will be installed near the outlet of the Basin at the pump station's wet well.
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Source: AKM (2010), OCFCD (2010), and AECOM (2010).



Not to Scale

**Figure 1-4
Pump Station**



East Side of Building

Source: OCFCD (2010), Knitter & Associates, and AECOM (2010).

Not to Scale

Figure 1-5
Rendering of Pump Station

- Paved areas around the pump station will be graded and curbed to prevent run-off from escaping the project site. Yard drains with filtered inserts will be provided as necessary to catch these flows.
- Concentrated flows from the pump station roof will also be filtered prior to being discharged into the Basin.
- Because the recreational area will be installed immediately upstream of the Basin and will require the use of fertilizer and pesticides, a bio-swale will be installed to capture the first flush runoff and prevent it from entering the Basin.
- Bio-swales, bioretention, and permeable paving will be installed in the parking lot.

Recreation Area

Approximately 48,360 cubic yards of material excavated from the existing island in the Basin and from the perimeter slopes will be used as fill at the northeast part of the Basin to provide an approximately 2.5-acre recreational area. This fill will be covered with 24 inches of clean fill/topsoil and seeded with turf grass. An irrigation system will be installed. Irrigation is discussed further in Section 1.1.5.7, Landscape Concept Plan.

Organized sports play may occur on weekends managed through the issuance of a reservation by the operator of the recreational area, currently expected to be the County of Orange, OC Parks. Weekday reservations for organized activities may be secured after review on an individual case basis. Neither weekend nor weekday activities may occur outside the normal park operation hours.

The configuration and operation of the area for organized sports will be limited by the amount of available off-street parking. Permits issued for organized sports would include conditions governing the scheduling of games and/or practices to ensure that adequate off-street parking would be available. A typical schedule representing day-long organized play on the sports fields, within the limits of available off-street parking, is shown below.

TYPICAL GAME SCHEDULE W/PROJECTED LOADING		
	Field A	Field B
Game 1 – 2	8:30 A.M.	9:30 A.M.
Game 3 – 4	10:30 A.M.	11:30 A.M.
Game 5 – 6	12:30 A.M.	1:30 P.M.
Game 7 – 8	2:30 P.M.	3:30 P.M.

Source: OC Parks, 2010.

Note: Games are staggered on each field every two (2) hours beginning at 8:30 A.M.

The boundaries of the sports fields will be located at least 85 feet from residential property lines. During the week the area would be available for non-reserved use.

Parking Lot

The existing 44-space parking lot will be reconfigured and expanded to include additional parking spaces. The new expanded parking lot will have approximately 80 parking spaces. The grassy area south of the existing parking lot will be used for the parking lot expansion. A new driveway from Haster Street will be constructed to provide additional access and will also serve as the temporary construction access during project construction.

Security Fencing and Lighting

A 6-foot-high wrought iron fence will be installed around the perimeter of the Basin for the safety of park users. The fence will be installed far enough down the slope of the Basin so that the top of the fence will be at the same elevation, or lower, as the top of the slope. This will ensure that the fence will not obstruct views across the Basin from the top of the slope where the perimeter walking path is located.

There will be no night lighting of the recreation area. However, in addition to the low wattage security lighting located just above each exterior door of the pump station, approximately 60 additional security lights would be installed at the parking lot and along the entire perimeter road around the Basin. These would be 12-foot concrete standard, 150-watt lamp or equivalent in brightness, vandal-resistant luminaire lights. The lights would be evenly spaced, approximately 100 feet apart. Because the park will continue to be operated as a dawn-to-dusk use park, these security lights will be shielded and light will be directed downward to ensure that light is confined to the site and that no nighttime-use illumination is provided.

Landscape Concept Plan

The landscape concept plan is provided on Figure 1-6. The plan shows turf areas, trees, the parking lot, decomposed granite path with par course equipment adjacent to the perimeter walking path, and concrete sidewalks. In the recreation area the plan shows the location of the sports fields, the bio-swale south of the fields, and picnic tables and shade structures between the bio swale and the Basin.

A total of 203 trees, primarily eucalyptus, pine, Brazilian pepper-tree, and myoporum, have been identified on the project site. Of the 203 trees, 46 are considered native to the region (sycamore, ash, and toyon) and the remaining 157 trees are considered non-native. Twenty-eight of these trees are located on City-owned property. Approximately 138 trees will be removed and will be replaced with fifteen-gallon and 24-inch box size specimens. The trees will be planted between the Basin perimeter road and the property lines, on the Basin slopes, and in the parking lot. All of the native and non-native trees will be replaced on at least a 1:1 ratio.

In addition to the replacement of trees, the project includes a planting plan of wetland and riparian native species for the Basin slopes. An approximately 0.20-acre seasonal wetland habitat area will consist of native, wetland herbaceous plants such as yerba mansa, saltgrass, toad rush, clustered field sedge, and alkali bulrush. These plants will be situated on the gradual slope near the Oertly Channel outlet. This gentle slope is expected to simulate the conditions present at the existing seasonal wetland area on the north side of the island that would be removed as part of the project. The seasonal wetland area would range in elevation from 93 feet to 101 feet, and would experience the fluctuating Basin water levels proposed to range between 94 and 99 feet, depending on the season. The planting plan also includes two bands of wetland/riparian and riparian habitat, respectively. There will be a lower wetland/riparian zone and an upper riparian zone along the banks of the modified Basin. A 0.94-acre wetland/riparian habitat band, ranging in elevation from 93 feet to 103 feet, would consist of native shrubs, herbaceous plants, and grasses such as black willow, California rose, salt marsh fleabane, iris-leaved rush, and spikerush. Above the wetland/riparian habitat band, a 0.75-acre riparian habitat band, ranging in elevation from 103 feet to 110 feet, would consist of native trees, shrubs, and grassland species such as western sycamore, ash, toyon, coast goldenbush, milkweed, California poppy, arroyo lupine, creeping wild rye, and needlegrass. The 6-foot-high security fence would be located within this riparian habitat band at an elevation of 104 feet.

The irrigation system will be water efficient, incorporating drip irrigation, as feasible. Recycled materials will also be used as much as possible in the landscape plan.

CONCEPT PLAN LEGEND	
SYMBOL	DESCRIPTION
1	OPEN TURF AREA
2	PICNIC TABLE
3	STABILIZED DECOMPOSED GRANITE TRAIL
4	CONCRETE SIDEWALK
5	SHADE STRUCTURE
6	PAR COURSE EXERCISE EQUIPMENT
7	FENCE
8	BASIN
9	ACCESS GATE
10	EXISTING TREE
11	NEW ASPHALT PARKING LOT
12	SHRUB AREA
13	NEW SHADE TREE
14	NEW LARGE SHADE TREE
15	BIO-SWALE / BIO RETENTION AREA
16	PASSENGER DROP-OFF ZONE
17	85' NOISE BUFFER SETBACK
18	NEW ACCESS DRIVEWAY
19	EXISTING ACCESS DRIVEWAY
20	BENCH
21	TURF BLOCK WITH GROUNDCOVER



Source: OCFCO (2010), Shmidt Design Group, Inc. (2010), and AECOM (2010).


 **NORTH** Not to Scale

Figure 1-6
Landscape Concept Plan

Construction

Construction Schedule and General Activity

Construction of the project is expected to take approximately 18 months. A crew of approximately 16-20 construction workers will be at the Basin during construction. OCFCD will provide a full-time construction inspector dedicated to the project. The noise ordinances will be enforced by OCFCD's inspector. Construction activities are required to be in compliance with State Construction Permit Order No. 2009-0009-DWQ.

At the beginning of construction, a temporary fence will be installed to secure the construction site. The site will be cleared of vegetation and the Basin will be dewatered so that it can be excavated and graded. Dewatering will continue throughout the excavation process. The existing on-site facilities, including an existing City-owned well in the southern part of the project site, will be demolished. All of the elements of the project described previously in Section 1.1.5, Description of the Project, will be constructed.

Following construction the temporary fencing will be removed and public access to the site will be restored.

Dewatering of Basin

Prior to grading work, the Basin will be dewatered to elevation 92-feet (estimated groundwater level). Initial dewatering will be performed by using the two pumps at the existing pump station located near the Basin outlet. After the water is reduced to elevation 92-feet, sump pumps will be placed on the floor of the Basin near the pump station to remove all ponding water to elevation 83-feet. Then trenches will be constructed in the bottom of the Basin. Sump pumps will be placed in these trenches to extract groundwater that will be collected and conveyed in the trenches to the existing concrete outlet structure. Additional dewatering wells will be installed around the excavation site and will be fitted with sump pumps. Pumped water will be discharged through the existing outlet structure to the existing downstream channel. All dewatering will be accomplished using submersible sump pumps that generate little noise. To reduce noise, power to run the sump pumps would come from the municipal power grid, and not a portable generator. Dewatering of the Basin will require treatment in compliance with the California Regional Water Quality Control Board (RWQCB) Santa Ana Region Order No. R8-2009-0030, NPDES No. CAS618030, and Order No. R8-2009-0003, NPDES No. CAG998001.

A separate channel will be excavated and connected to the existing concrete outlet structure to transport stormwater from the Basin to the downstream channel without the need to pump any stormwater that may occur during construction.

Field Office and Construction Staging Area

A field office would be located in the southwest corner of the project site, if space permits. The northwest corner of the Basin, nearest to the intersection of Heather Avenue and Volkwood Street, would serve as an alternative locale for the field office. The Park paved parking lot will be sectioned off to serve as equipment storage.

Construction Equipment and Truck Trips

Major equipment to be used during construction includes, but is not limited to:

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- Three (3) large excavators.
 - One (1) pile driver.
 - Three (3) dozers.
 - Three (3) front loaders.
 - One (1) grader.
 - Two (2) earth movers.
 - Two (2) cranes.
 - One (1) asphalt paver.
 - One (1) well drilling rig.

Dump trucks will be required to export approximately 111,611 cubic yards of excavated material and import 9,680 cubic yards of clean fill/top soil. Flat-bed trailers will be used to deliver steel and miscellaneous supplies and concrete trucks will be used to deliver approximately 3,000 cubic yards of concrete. Other equipment to be used during project construction includes crew vehicles (pick-up trucks) and portable trailers to serve as field offices. Mufflers will be required on all construction equipment.

To minimize air quality impacts, the following air quality-related Project Design Features (PDFs) will be required during construction of the project:

PDF-AQ-1 All off-road equipment will be equipped with Tier 3 engines.

PDF-AQ-2 Haul trips will be limited to a maximum of 50 trips per day at 32 miles round trip.

Construction Access

Construction access will be provided from Haster Street, east of the Basin, near the intersection of Haster Street and Fairlane Drive. This temporary access will be adjacent to the children's play area, which will be closed for safety purposes. The construction access road will become a permanent entrance/exit for the parking lot at the end of construction. Construction vehicles will not be allowed to access the site from Aspenwood Lane in accordance with City requests.

Public Use of the Park During Construction

The entire park, including the Basin, Basin perimeter trail, children's play area, and parking lot, will be closed during construction for safety purposes. No public access will be allowed to the Basin and adjacent park. Construction is expected to last approximately 18 months. Security fencing will be installed around all work areas during construction.

POST-CONSTRUCTION

During construction, all park amenities may be removed including park benches, exercise stations, picnic tables, and barbeque grills. Following construction, exercise stations will be provided and Park amenities will be installed.

After construction, the perimeter walking path will be available for public use. At the pump station, the perimeter walking path will route visitors around the pump station with a line of sight available from both sides of the pump house structure.

Following construction, the site is required to comply with RWQCB Santa Ana Region Order No. R8-2009-0030, NPDES No. CAS618030.

MAINTENANCE

General monthly pump station maintenance would include checking and maintaining the various pieces of equipment (engines, batteries, controllers, sump pumps, back-up generator), the wet well, and parking area; and trash removal. During the monthly maintenance, the engines would be operated for up to 20 minutes and the back-up generator would be run once or twice per month. After each substantial rain event (more than 1 inch of rain), personnel would clean up floatable and other debris using a vacuum (vactor) truck, trash truck, and dump truck. Annually, each sump pump would be pulled for maintenance and any Basin slope erosion would be repaired.

Maintenance for the recreation area would include weekly mowing and watering, and reseeding or repair once per year or on an as needed basis. Fertilizers and pesticides would be applied as needed and in accordance with OC Parks' Integrated Pest Management Program. Trees would be pruned every one to two years depending on variety and/or growth rates and habits. Bio-swales will also be maintained. Following construction, OC Parks will be responsible for maintaining the area of the Park that is on County-owned property.

Additionally, OCFCD will perform maintenance of the invert over time, remove trash and debris around the Basin, prune trees on the Basin slopes, and conduct repair of the Basin fence.

PERMITS AND REGULATORY APPROVALS

The following permits and regulatory approvals are required for the project:

- Certification of the EIR by the Orange County Board of Supervisors and the Orange County Board of Supervisors acting as governing body of the Orange County Flood Control District.
 - Clean Water Act Section 401 Water Quality Certification from the Santa Ana Regional Water Quality Control Board (RWQCB).
 - National Pollutant Discharge Elimination System (NPDES) permit/notification.
 - Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers.
 - California Department of Fish and Game (CDFG) Section 1602 Streambed Alteration Agreement.
 - Air Quality Management District (AQMD).
 - Form 400A – Permit to Construct and Operate.
 - Form 400CEQA – for Air Quality Impacts.
 - Form 400E13 – for Internal Combustion Engines.
 - Aboveground Bulk Storage Tank Permit (for back-up propane tanks) from the City of Garden Grove.
 - Approval of project plans and specifications by the City of Garden Grove City Council as required by the Public Contract Code 21020.9.
 - Approval of project plans and specifications by the Department of Water Resources, Division of Safety of Dams.
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The Project Goals and Objectives are consistent with SAWPA's adopted IRWM Plan. The proposed Haster Retarding Basin and Pump Station project is number 141 in the Santa Ana Watershed Project Authority's 'One Water One Watershed (OWOW) IRWM Plan for the Santa Ana Watershed, adopted November 16, 2010.

The proposed project will comply with the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan). The following existing beneficial uses of the receiving waters in the Basin Plan are: navigation; water contract recreation; non-water contact recreation; commercial and sportfishing; preservation of biological habitats of special significance; wildlife habitat; rare, threatened or endangered species; spawning, reproduction and development; marine habitat; shellfish harvesting; and estuarine habitat.

The waterbody type of the Basin Plan considered to be applicable for the project is enclosed bays and estuaries, because the Basin drains to this waterbody type. The following monitoring, assessment and performance measures are consistent with the Basin Plan.

1. Purpose and Need:

The Haster Retarding Basin and Pump Station Project is greatly needed to increase the capacity of the flood control basin. The project will serve as a regional flood control facility. The inflow into the basin is 2200 cfs and the capacity of the outlet channel is only 400 cfs. Upstream development of the Anaheim Resort (Disneyland) Specific Plan can not proceed until improvements are made at Haster Basin. The Project is part of the East Garden Grove Wintersburg (Facility C05) flood control system, which is currently the largest flood control threat in the County of Orange as determined by the Orange County Flood Control District and concurred by the U.S. Army Corps of Engineers Los Angeles District.

2. Project List:

The Haster Pump Station and Haster Retarding Basin is the only project in the Proposal. This is the only project proposed from OC Public Works of the County of Orange.

Project List

The table below provides detail on the proposed Project, including the name, an abstract, current status and implementing agency.

Proposed Project	Implementing Agency	Project Abstract	Status of Project Elements
Haster Retarding Basin and Pump Station Project	Orange County Flood Control District/County of Orange	See project abstract above (Project Description)	<ul style="list-style-type: none"> -EIR out for public review, comments due by May 12, 2011 -Request Board of Supervisor to certify EIR in August 2011., -Regulatory Permit application to be submitted on April 18, 2011 -70% Design Plans and Specifications submitted -90% Plans and Specifications being developed -No right-of-way acquisition necessary

3. Integrated Elements of Projects:

This Project is directly linked to the C05 – East Garden Grove Wintersburg flood control system, currently the largest flood control threat in the County of Orange. There is synergy and linkages between all the projects on the East Garden Grove Wintersburg Channel. The U.S. Army Corps of Engineers is currently studying the entire watershed and completing a Watershed Feasibility Study to determine Federal interest. There have been numerous studies of this system on a watershed scale. Although there are many projects currently under construction or contemplated in this watershed, the proposed project is a critical component of enhancing flood control for the system. The proposed project is the only one for which a grant application under Proposition 1E, Stormwater Flood Management, is being submitted at this time by the County of Orange.

4. Regional Map:

A regional map is included above. The map displays the location of activities of the project. Also included are the watershed boundary map of the watershed tributary to Haster Basin and a map of the entire watershed after the task table.

5. Completed Work (Scientific and Technical Information):

The work that has been completed or is expected to be completed prior to the grant award date is as follows:

Completed as of April 15, 2011:

1. Submitted permit applications and applicable fees to the Corps of Engineers, Santa Ana Regional Water Quality Control Board, and the Department of Fish and Game
2. Preliminary Design Report

3. Construction drawings to the 70% level
4. Specifications to the 70% level

Expected to be Completed Prior to Grant Award (September 2011)

1. Construction drawings to the 100 percent level (September 2011)
2. Specifications to the 100 percent level (September 2011)
3. Final Engineer's Construction Cost Estimate (September 2011)
4. Board of Supervisors certification of CEQA (September 2011)
5. Receipt of all Regulatory Permits (September 2011)

6. Existing Data and Studies (Scientific and Technical Information:

Multiple studies, reports, plans and specifications have been completed by the County of Orange/Orange County Flood Control District for the Haster Retarding Basin and Pump Station project. These are as follows:

- A. Completed Plans and Specifications to the 70% level.
- B. Project Report for the East Garden Grove-Wintersburg Channel (Facility No. C05), Prepared by Williamson and Schmid, Dated 1994.

The report recommended improvements to the Haster Basin System to reduce the 100-year expected value peak outflow from 2,200-cfs to a maximum downstream channel capacity of 450-cfs. Specifically, improvements which were recommended that directly impacted Haster Basin included:

- Enlargement of the upstream reach of the East Garden Grove-Wintersburg Channel from a single 9-foot by 6-foot RCB to a double 9-foot by 6-foot RCB.
- Construction of a 420-cfs pumping facility consisting of seven (7) 60-cfs capacity pumps, staged to start at 1-foot intervals, up to the invert elevation of the outlet channel. Pumps would be turned off in 1-foot intervals as the water level continued to decrease in the Basin. No regrading of the Basin was proposed, however the entire volume of the Basin was assumed to be available above the base elevation of 87 feet (no dead storage).

The study also investigated the alternative of constructing a gravity drain, near the bottom of the Basin, aligned parallel to the downstream channel, as a means of eliminating the need for a pump station. Approximately 2,700 LF of 108-inch RCP would be required, daylighting into the East Garden Grove-Wintersburg Channel near the Garden Grove Freeway. The study concluded that the alternative was not feasible as there was not sufficient right-of way to construct such a facility.

Haster Basin Outflow

The capacity of the Haster outlet channel is 450-cfs with limited freeboard and 400 cfs with 2-ft of freeboard.

C. Preliminary Design Report, Haster Retarding Basin, prepared by CH2MHill, dated November 2001

The study evaluated multiple alternatives for improving the Haster Retarding Basin, and provided costs and preliminary design information for the preferred approach. Criterion for the recommended project was as follows:

- 1) Limit downstream channel discharges from the basin to a maximum of 450-cfs.
- 2) The 100-year expected value flow into the Basin is 2,200-cfs.
- 3) The 100-year storm is to be contained within the Basin with 2 feet of freeboard.
- 4) Two feet of dead storage is to be provided at the bottom of the basin for a water quality wetlands feature.
- 5) The maximum Basin water surface elevation is limited to 108.0 feet to ensure consistency with the City of Anaheim Drainage Master Plan hydraulic calculations for the Haster Street Relief Drain.
- 6) The Maximum water level should not exceed elevation 109.0 feet, to eliminate the need for levee certification.

The Preliminary Design Report recommended the construction of a 375-cfs pump station (3-125-cfs pumps) and regrading of the Basin to remove the existing island. The maximum water surface elevation would be limited to 108.0 feet, with the spillway elevation set at 110.0 feet. A 2-foot dead storage area (elevation 87.5-feet to elevation 89.5-feet) would be provided for a water quality wetlands area, and to maintain a water amenity at the Park.

Additionally, the report recommended improvements to the upstream East Garden Grove-Wintersburg Channel beyond those contained in the 1994 Project Report. These improvements were as follows:

- 1) Replace the reach of reinforced concrete box immediately upstream of Haster Basin (Reach 11A; Sta 596+81 - Sta 608+22) with a double 11.5-foot wide by 6-foot high reinforced concrete box (RCB). The 1994 Project Report had recommended constructing a second 9-foot by 6-foot RCB next to the existing 9-foot by 6-foot RCB storm drain.
- 2) Widen the 1994 Project Report recommended rectangular channel from 20 feet to 24 feet in Reaches 12A and 12C (Sta 608+22 - Sta 617+20 and Sta 617+83 - 622+17).

D. Hydrology Report, Haster Retarding Basin Facility No. C05B02 – Total Inflow Including Contributions from the East Garden Grove-Wintersburg Channel (C05) and Oertley Storm Drain (C05P19), Dated September 2001.

The report determined the expected value peak inflow to Haster Retarding Basin for return periods of 2, 5, 10, 25, 50 and 100 years. The calculated inflows were as follows:

Storm Frequency	Expected Value Peak Inflow
2-Year	540-cfs
5-Year	880-cfs
10-Year	1,400-cfs
25-Year	1,750-cfs
50-Year	2,000-cfs
100-Year	2,200-cfs

- E. City of Anaheim Master Plan of Drainage for the South Central Area, Dated February 1993, Second Revision

The Master Plan provided a comprehensive long range planning tool for the City to implement drainage improvements in its South Central area. The report addressed areas tributary to the Anaheim-Barber City Channel and Haster Basin.

Improvements recommended for the Haster Basin systems included the construction of a 96-inch diameter storm drain in Haster Street that would discharge 420-cfs of flow directly into the Basin near the existing East Garden Grove-Wintersburg Channel inlet. When completed, the proposed facility would reduce the 100-year expected value flow in the undersized Oertley Storm Drain from 700 to 280-cfs.

- F. Final Approved Hydrology Study for Haster Basin dated 2001

The hydrology study for the Haster Basin and Pump Station project was prepared and adopted by the County of Orange/Orange Count Flood Control District in 2001.

- G. Additional Studies completed by the County of Orange to support the advancement of this project are:

1. 2008 Preliminary Design Report for Haster Pump Station and Retarding Basin prepared by AKM Consulting Engineers
2. 2004 Geotechnical Study for Haster Basin prepared by Ninyo and Moore
3. 2005 Geotechnical Study for Haster Basin prepared by Ninyo and Moore
4. Draft EIR dated March 2011 prepared by AECOM
5. Water Quality Study dated 2010 prepared by AECOM
6. Water Quality Study dated 2010 prepared by PACE
7. Draft Westminster Watershed Study currently being prepared by the U.S. Army Corps of Engineers including Haster Basin

All of these reports and studies for Haster Basin are available for review by the Department of Water Resources (DWR) for this grant application. Since it is not our intent to overwhelm DWR with in excess of one foot thick stack of reports double sided

we are including only the reports deemed absolutely necessary to support the grant application. However, any of the other reports directly applicable to our project can be provided if requested by DWR to ensure that adequate science and environmental studies have confirmed the viability and necessity of this project. Of all the reports, studies, plans and specifications listed, the items considered absolutely critical for the application include the 70% complete plans and specifications, the Preliminary Design Report (not including appendices), and limited portions of the U.S. Army Corps of Engineers Feasibility Study.

7. Project Map:

A site map showing the project geographical location and the surrounding work boundaries is attached.

8. Project Specifics:

The Haster Retarding Basin and Pump Station Project is not part of the State Plan of Flood Control (SPFC). The Haster Project is in city of Garden Grove in the Westminster Watershed. The Westminster Watershed is adjacent to the Santa Ana River Watershed but is a completely separate watershed. State flood control subvention funds are received for the Prado Dam project in the Santa Ana River Watershed; however, the Westminster Watershed is separate.

9. Project Timing and Phasing:

This project is a stand alone project that will greatly benefit the C05 – East Garden Grove Wintersburg flood control system. There are upstream flood control deficiencies that can not be corrected until the improvements at Haster Basin have been completed. The purpose of this Haster Basin project is to reduce the discharge from the Basin from 2200 cfs down to 460 cfs. This will be accomplished by pumping down the early portions of the storm to ensure that there is sufficient capacity in the basin for the peak storm flows. The downstream channel is sufficiently designed to accommodate the 460 cfs from the project.

Work Plan	
Budget Category (a): Direct Project Administration Costs	
Task 1: Administration	
1.1 The County of Orange/OC Public Works will perform all project management tasks required to complete the project. This task consists of, in part, tracking the day to day progress of the project, paying consultants, reviewing plans, specifications, cost estimates, etc.	
Deliverables: Invoices	
Task 2: Labor Compliance Program	
2.1 The County of Orange/OC Public Works will submit a Labor Compliance Program to the Department of Water Resources	

Deliverables: Labor Compliance Program

Task 3: Reporting

3.1 Prepare quarterly progress reports to the Santa Ana Watershed Project Authority for submittal to the Department of Water Resources' project representative pursuant to the grant agreement. The progress report will describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work under the grant agreement. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts.

3.2 Prepare annual reports pursuant to the grant agreement.

3.3 Prepare a draft final report to the Santa Ana Watershed Project Authority that summarizes project accomplishments and submit to Department of Water Resources' project representative for review and comment. The report will include the following requirements:

- a. An introduction section including a summary of the conditions the project is to alleviate, the project's objective, the scope of the project, and a brief description of the approach and techniques used during the project.
- b. A deliverables previously submitted as outlined in the Schedule of Completion.
- c. Any additional information that is deemed appropriate by the DWR's Project Representative and/or Contractor Project Representative.
- d. Indicate whether the goals of the project have been met.
- e. Include information collected in accordance with the project Monitoring and Reporting Plan, including a determination of the effectiveness of the project in preventing or reducing pollution and the results of the monitoring program.

3.4 Prepare a final report that addresses the draft final report comments by the DWR.

Deliverables: Submission of quarterly, annual and final reports as specified in the Grant Agreement

Budget Category (c): Planning/Design/Engineering/Environmental Documentation

Task 4: Assessment and Evaluation

4.1 Prepare a Project Assessment and Evaluation Report (PAEP) to detail the methods of measuring and reporting project benefits.

4.2 Prepare a Quality Assurance Project Plan (QAPP) in accordance with the SWRCB Surface Water Ambient Monitoring Program (SWAMP) and data reporting requirements using the existing Orange County Stormwater Monitoring Program QAPP.

4.3 Prepare a Monitoring Plan consistent with the Public Resource Code and SWAMP, which will include a description of the monitoring objectives, types of constituents to be monitored and the sampling frequency and schedule for the monitoring activities. Monitoring will include physical, chemical and biological monitoring.

Deliverables: Monitoring Plan, Completed QAPP, Completed PAEP and other data management and monitoring deliverables as required

Task 5: Final Design

5.1 Complete design of the Haster Retarding Basin and Pump Station Project. 90% and final design plans will be prepared as part of this task. A construction cost estimate will be prepared based on the final plans. The construction plans include:

- Civil/Grading
- Architectural
- Structural
- Mechanical
- Utility
- Electrical

The construction work, methods and materials will be completed in accordance the County of Orange construction standards and with the provisions of the latest edition of the Standard Specifications for Public Works Construction (Green Book) standards.

Deliverables: 90% and Final Plans, Specifications and Estimate

Task 6: Environmental Documentation

6.1 The project EIR was submitted for public review on March 28, 2011. The Board of Supervisors is expected to make CEQA Findings and Certify the EIR in September 2011.

6.2 Submit Fish and Game receipt.

6.3 Conduct pre and post-construction monitoring as described in approved project QAPP, PAEP, and Monitoring Plan.

Deliverables: Approved and adopted EIR, Board Minute Order, Filed and Posted NOD, Fish and Game Receipt

Task 7: Permitting

7.1 The 401, 404, and 1602 permit applications are going to be submitted to the Resource Agencies on April 18, 2011. Approvals are required from the Department of Safety of Dams (DSOD), Air Quality Management District (AQMD) and the City of Garden Grove. The 401 water quality certification, 404 permit, and 1602 agreement are expected to be issued in September 2011. Approvals from DSOD, AQMD and the City of Garden Grove are expected to be secured by September 2011. The NPDES dewatering permit for the project has already been received. The project is not in the coastal zone so no Coastal Development Permit (CDP) is required.

Deliverables: 401, 404, 1602, DSOD, AQMD permits and approval from City of Garden Grove City Council of the plans and specifications

Budget Category (d): Construction/Implementation

Task 8: Construction Contracting

8.1 The County will bid and award a construction contract for the Haster Retarding Basin

and Pump Station Project in accordance with the County of Orange construction bidding procedures and the Public Contract Code. This task includes preparing the agenda staff report for the Board of Supervisors to approve the plans and specifications and set the bid opening date, advertising for bids, conduct public bid opening, evaluation of bids, preparing agenda staff report for the Board of Supervisors to award the construction contract, award the construction contract, obtain the contractors bonding and insurance and issuing the Notice to Proceed.

Deliverables: Board Minute Order approving plans and specifications, copies of letters to a minimum of four advertisers, final plan holder list, bid summary and bid abstract from bid opening, Board Minute Order awarding construction contract, Notice to Proceed to the construction contractor

Task 9: Construction

The County of Orange shall construct the Haster Retarding Basin and Pump Station according to the approved plans and specifications.

9.1 Mobilization and Site Preparation

- Install construction trailers and temporary utilities at the project site
- Install orange fencing around the perimeter of the project
- Provide pollution prevention and erosion control at the project site
- Perform pre-construction bird surveys that will be required in the permits
- Initiate dewatering operations
- Perform clearing and grubbing operations

9.2 Project Construction

Project Construction includes the construction and installation of the following items:

- Remove center island from lake for increased flood storage
- Grading operations to lower the basin for water quality
- Steepen basin slopes for increased flood storage
- Construction triple barrel reinforced concrete flood control box
- Grade flat surface over reinforced concrete box for recreational fields
- Construct pump station wet well
- Construct pump station structure
- Install pump station roof
- Install pumps
- Install engines
- Install bridge crane
- Install remainder of pump station equipment
- Construct spillway
- Construct outlet channel

9.3 Performance Testing and Demobilization

The County of Orange shall perform the necessary testing of the pump station equipment and demobilize and reopen the 21.2 acre site to the public.

Deliverables: Pre-construction photos, construction photos

Budget Category (e): Environmental Compliance/Mitigation/Enhancement

Task 10: Environmental Compliance/Mitigation/Enhancement

10.1 The County of Orange shall perform all groundwater and storm water quality testing as required in the Construction General Permit and NPDES permit.
--

10.2 The County of Orange shall convert the entire perimeter of the existing lake from non-native turf grass to native plants.
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Deliverables: Copies of water quality testing during construction, photo-documentation of habitat enhancement

Budget Category (f): Construction Administration

Task 11: Construction Administration

10.1 The County of Orange shall provide construction administration and inspection services to ensure proper construction practices are followed according to all applicable construction plans, construction standards, and health and safety codes. An inspector is to be at the job site whenever the construction contractor is working. In addition, the County shall:

- | |
|---|
| <ul style="list-style-type: none">• Ensure all dust and noise mitigation measures are followed.• Monitor working hours• Prepare daily log of construction activities• Provide construction survey staking and geotechnical services in support of the construction activities.• Work with the surrounding neighbors to resolve any complaints that may arise during construction. |
|---|

Deliverables: Copies of monthly contractor progress payments
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Westminster Watershed

Westminster Watershed

Los Alamitos
Channel

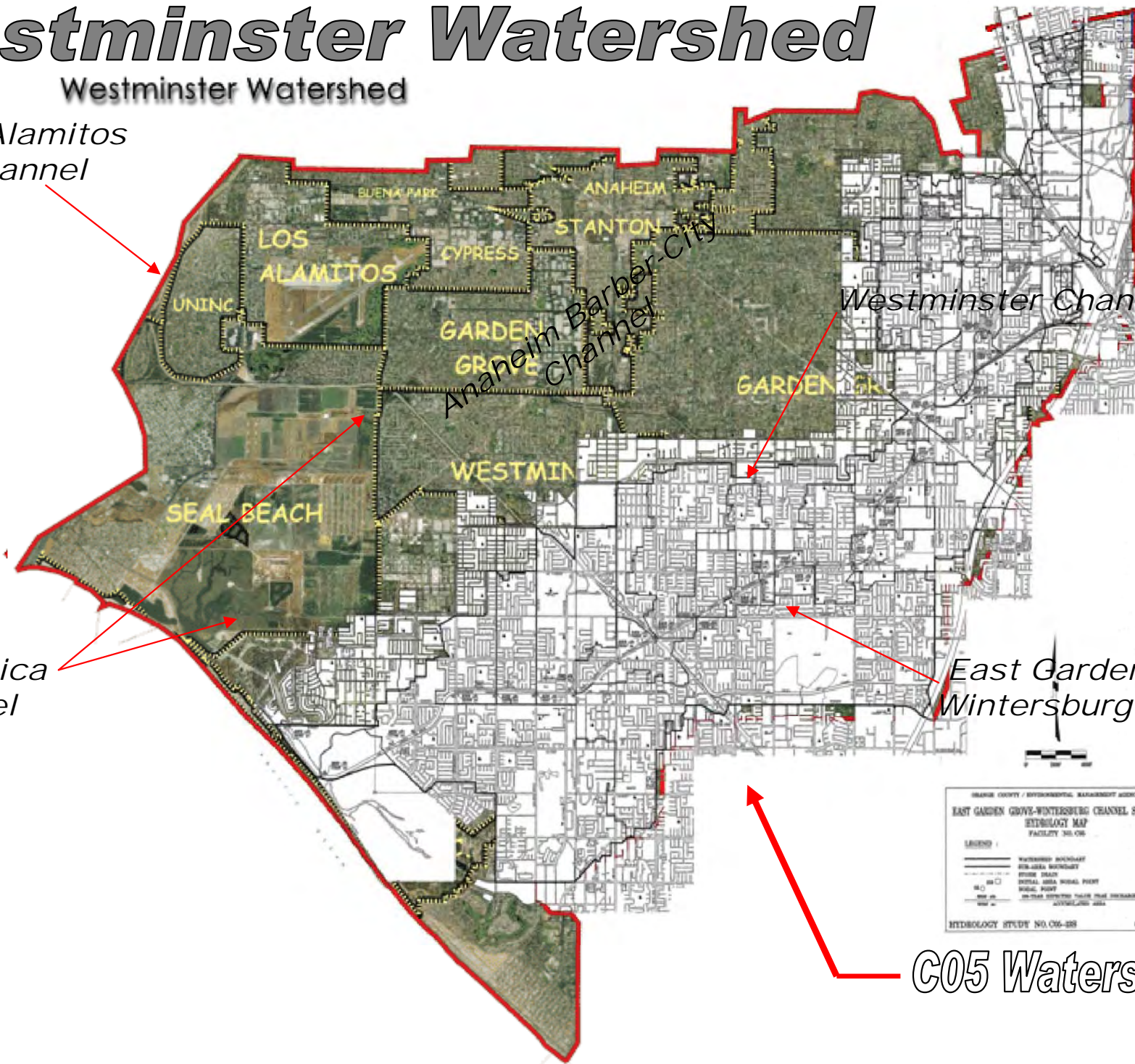
Bolsa Chica
Channel

Anaheim Barber-City
Channel

Westminster Channel

East Garden Grove-
Wintersburg Channel

C05 Watershed



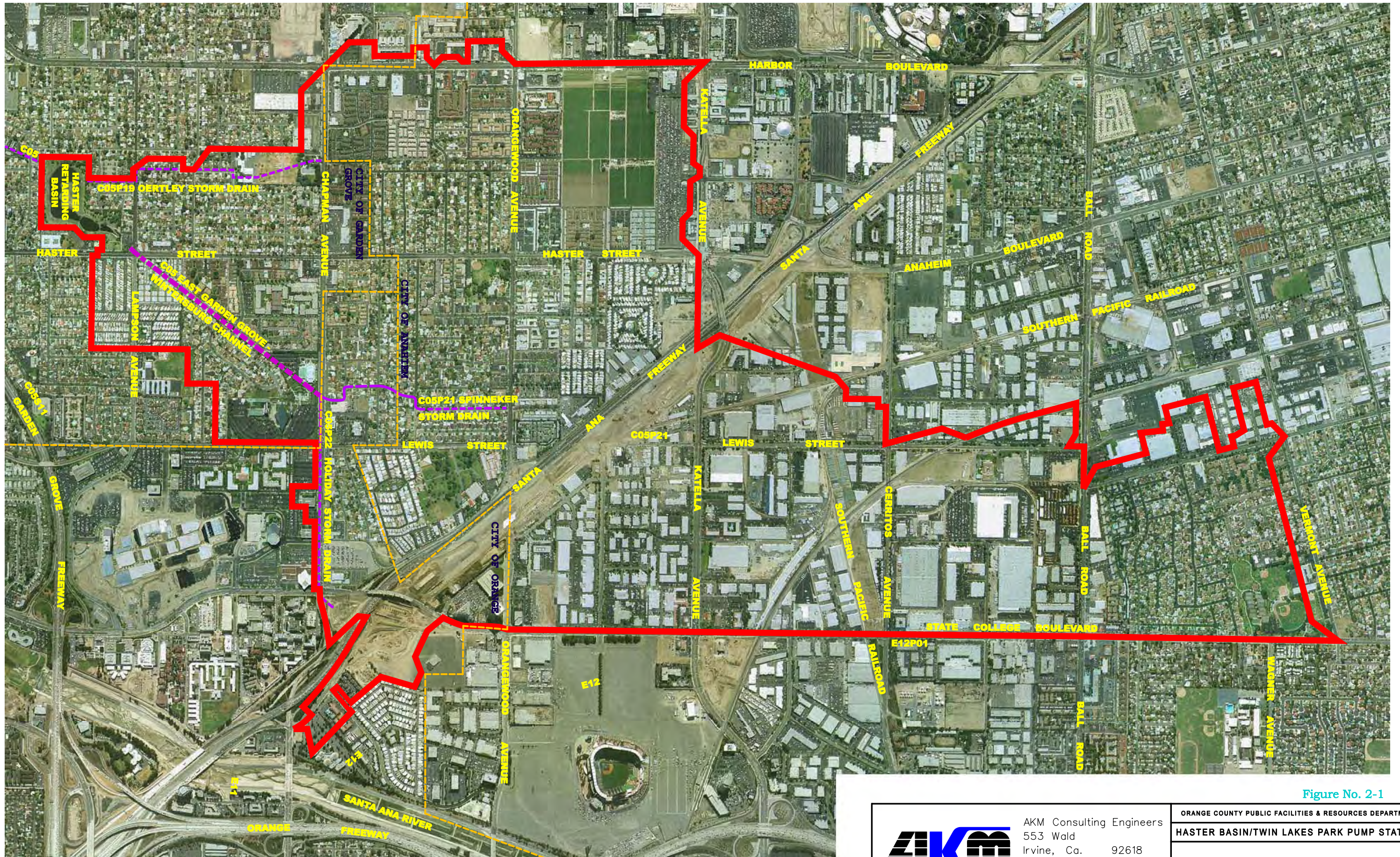



Figure No. 2-1

	AKM Consulting Engineers	ORANGE COUNTY PUBLIC FACILITIES & RESOURCES DEPARTMENT
	553 Wald	HASTER BASIN/TWIN LAKES PARK PUMP STATION
	Irvine, Ca. 92618	HASTER RETARDING BASIN DRAINAGE BOUNDARY
(949) 753-7333		